

1 6. (amended) Chromatography process according to
2 claim 4, in which detected ultrasound signals are
3 transmitted transversely to the direction of accumulation
4 of the packed bed of medium.

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1 7. (amended) Chromatography process according to
2 claim 4, in which detected ultrasound signals are
3 transmitted through the bed space at plural locations
4 distributed along the direction of accumulation of the
5 packed bed of medium.

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1 9. (amended) Chromatography process according to
2 claim 7, in which respective real-time rates of advance
3 are determined for a plurality of said locations and
4 compared with respective target values constituting a
5 predetermined packing profile, and feedback control
6 signals sent to a packing pump in dependence on the
7 comparisons.

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1 11. (amended) Chromatography process according to
2 claim 4, in which a control processor, operatively
3 connected to the packing pump and ultrasound detection
4 arrangement, is loaded with target packing data from a
5 discrete data carrier, and controls the packing pump in
6 dependence on comparisons between the detected and target
7 data.

1 12. (amended) Chromatography process according to
2 claim 4, in which a detected ultrasound transmission
3 adjacent that end of the bed space last filled by the
4 accumulating bed is used to detect the arrival of the
5 advancing bed front and thereby initiate reduction or
6 cessation of pump operation at the end of the packing
7 procedure.

A4 1 13. (amended) Chromatography process according to
2 claim 4, in which a control processor is programmed to
3 respond to a detected dip in packing pressure,
4 corresponding to the bed space becoming full of medium,
5 by turning off the packing pump.

1 14. (amended) Chromatography process according to
2 claim 1, comprising said ultrasound transmission through
3 the bed space during the passage of process liquid
4 through the packed bed, to detect the presence and/or
5 position of a said component in or passing through the
6 bed.

A 1 16. (amended) Chromatography process according to
2 claim 1, in which a detected ultrasound transmission
3 through the packed bed adjacent an input end for the
4 process liquid is used to determine the extent of

5 encroachment of bound impurity into the bed from the
6 input end.

Please ~~cancel~~ claim 17 without prejudice.

1 20. (amended) Chromatography apparatus according to
2 claim 18, in which said transmitter and/or detector is on
3 the outside of the housing wall, so that the ultrasound
4 signal is transmitted to the detector through the wall as
5 well as through the bed space.

1 21. (amended) Chromatography apparatus according to
2 claim 18, in which plural said transmitters and/or plural
3 said detectors therefor are distributed along the column
4 in a direction between an inlet and an outlet of the
5 column.

1 22. (amended) Chromatography apparatus according to
2 claim 18, in which the column is a vertical cylinder,
3 e.g. with a steel side wall.

1 23. (amended) Chromatography apparatus according to
2 claim 18, comprising a control processor operatively
3 connected to the ultrasound transmitter and detector and
4 programmed to determine a speed and/or attenuation for

5 the transmissions between them via the internal bed
6 space.

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1 24. (amended) Chromatography apparatus according to
2 claim 18, in which the chromatography column has a port
3 through its housing wall adapted for the injection of a
4 slurry of particulate medium for packing the column.

1 31. (amended) Chromatography packing apparatus
2 according to claim 29, comprising a set of the ultrasonic
3 transmitters and detectors.

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1 32. (amended) Chromatography packing apparatus
2 according to claim 29, comprising a data reader for
3 reading a set of prescribed packing parameters for a
4 given column and medium from a discrete data carrier.
